Fact Sheet

Former Montrose Facility
Henderson, Nevada

UPDATED OCTOBER, 2008

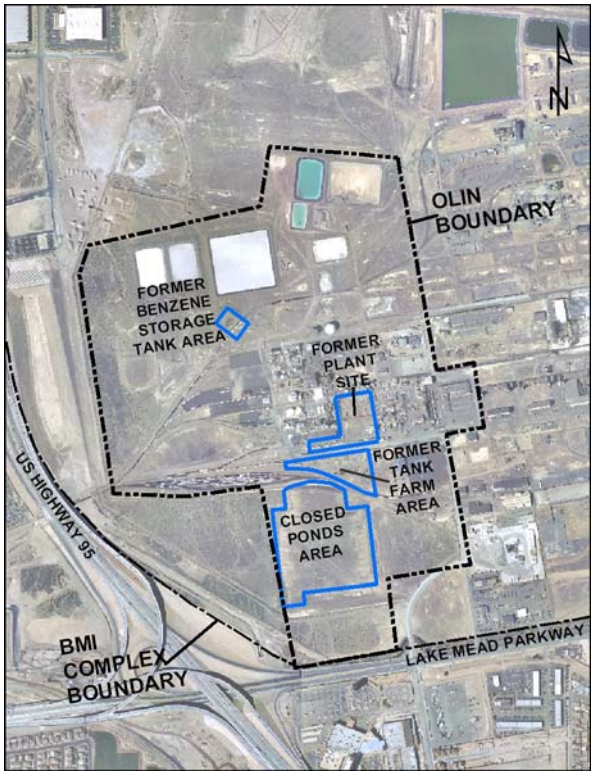
The Montrose Chemical Corporation of California (Montrose) formerly operated a chemical manufacturing plant located within what is now the Olin Corporation, Inc. (Olin) facility in the southwestern portion of the BMI Complex, Henderson, Nevada. The Montrose plant ceased operations in 1983 and the main plant was demolished except for a hydrochloric acid manufacturing unit that eventually was sold to Olin's predecessor, Pioneer Americas, LLC. Various closure activities, including the closure of former evaporation ponds, continued until 1989.

Administrative History

In 1991, Montrose entered into a Consent Agreement with the Nevada Division of Environmental Protection (NDEP) requiring Montrose to conduct a Phase I Environmental Conditions Assessment (ECA) of the former Montrose facility to identify areas of potential environmental concern. Montrose submitted its ECA report to NDEP in 1993.

In 1994, NDEP issued a Phase II Letter of Understanding (LOU) that outlined specific environmental issues to be investigated by Montrose. Subsequently, Montrose entered into another Consent Agreement with the NDEP in 1996 to conduct a Phase II Environmental Conditions Investigation (ECI) of areas of potential environmental concern at the former Montrose facility as identified in the LOU.

As of October 2008, Montrose and NDEP are in the process of negotiating a Phase 3 Consent Agreement to carry the program through remedial operations.



Former Montrose Facility Location

Preliminary Site Investigations

Upon completion of the 1996 Consent Agreement, Montrose completed a series of soil and groundwater investigations resulting in the submittal of a series of reports and other correspondence to NDEP that preliminarily evaluated potential chemical impacts to soil and groundwater from the former plant operations. Of principal importance among these documents were the following reports:

- Draft Phase II Environmental Conditions Investigation Report - August 1997
  Evaluated chemical presence in soils at areas of the former plant specified by the LOU

- Additional Groundwater Investigation Report - February 2000
  Evaluated the presence of chemical migration in groundwater from the Montrose closed pond area

- Conceptual Site Model - Closed Montrose Ponds - February 2000
  Integrated soil and groundwater chemical concentration data to form a partial picture of source area contribution and chemical migration in groundwater from the Montrose closed ponds
- Investigation of Deeper Water-Bearing Zones at the Closed Ponds and Former Plant Site March 2001
  Began an evaluation of hydraulic characteristics and the presence of site-related chemicals in the Muddy Creek formation beneath the former Montrose plant areas

For all reports, NDEP provided comments and Montrose responded with further information and discussion to clarify the findings of the investigation and to agree on further required work.

Recent Site Investigation

Subsequent to the completion of the preliminary field investigations outlined above, Montrose, in coordination with NDEP, developed workplans and implemented further soil and groundwater investigation tasks believed necessary to complete a thorough investigation of the site. The following tasks have been completed or are ongoing as of October 2008.


Monitor Well Drilling

- An evaluation of chemical analytical methods was conducted in 2006 to assure that chemicals used in former Montrose processes could be detected adequately to identify their presence in soil or groundwater.
- An evaluation was also completed in 2006 to identify all possible chemicals that may be related to former plant operations. Future investigation work has used this expanded list of analytes.
- Extensive additional soil sampling and dense non-aqueous phase liquid (DNAPL) screening was completed in late 2006 and 2007 at all former Montrose operations areas. In co-operation with representatives of the adjacent former Stauffer Chemical Company (Stauffer) facility, an extensive evaluation of groundwater quality throughout the combined facility area has been conducted. This evaluation included the installation and sampling of several new monitor wells.
- A groundwater monitoring program was established in late 2007 and is ongoing. The program includes groundwater sampling and water level measurements at monitor wells located throughout the facilities area north to Las Vegas Wash, and NAPL measurements at monitor wells located in the area of the former Montrose and Stauffer facilities.

The data from these investigations was used to develop a comprehensive Conceptual Site Model (CSM). The CSM was submitted to NDEP in September 2007 and revised with supplemental data in July 2008. The CSM combines information generated by both the Montrose and the Stauffer facility investigation work to provide a site-wide evaluation of source area contribution and groundwater contaminant transport to support future risk assessment and an evaluation of the potential need for additional remedial actions.

Additional drilling was completed in 2007 and 2008 to determine the extent of DNAPL materials in the former Montrose facility area. This investigation included DNAPL screening and sampling at several borings located north and east of the former Montrose plant site and closed ponds areas on to adjacent properties. Additional borings were also drilled in the Montrose closed ponds area in 2008 and screened for DNAPL. A summary of all DNAPL investigative work was submitted to NDEP in October 2008.

Remedial Operations

While these additional investigations and evaluations are ongoing, Montrose is accelerating remediation by conducting an interim remedial measure at a portion of the former plant site.

Soil vapor extraction (SVE) is being applied to remove volatile organic compounds from soils identified by the preliminary investigation programs. The SVE system was expanded in 2007 based on additional data collected in 2006 and 2007. SVE operations began in September 2004 and are expected to continue for several more years.

Soil Vapor Extraction System

Finally, over the last four years, Montrose, Olin (formerly Pioneer), and Stauffer Management Company, LLC (SMC) have been upgrading and renovating the groundwater treatment system (GWTS), first installed downgradient of the former Stauffer and Montrose facilities in 1983. The purpose of the system is to prevent the migration of contaminated groundwater off-site and the original system used air-stripping to remove volatile chemicals from groundwater downgradient of the former facilities.

Upgraded Groundwater Treatment System

The GWTS was recently upgraded to improve capture and treatment of groundwater. Pumping rates have been increased through extraction well renovation and improved control, the tower air-stripping system has been replaced with a modern and more efficient tray-type system, and carbon adsorption treatment has been added to the treatment process. Evaluations are ongoing as of October 2008 that will lead to further improvements in groundwater capture and treatment.

INFORMATION AND COMMUNITY INVOLVEMENT

NDEP oversees all aspects of the environmental work at the former Montrose facility. Additional information can be obtained from Marysia Skorska (702-486-2850 ext. 252) or Brian Rakvica (702-486-2850 ext. 247) at NDEP. Montrose welcomes community input to this project and recognizes the need to respond to community concerns. Previous reports related to the environmental work at the site can be found at the City of Henderson Public Library and correspondence can be obtained from NDEP's offices in Las Vegas or Carson City.